

Claims

1. An inner elongated non-rotating structure (11; 104) of the roll of a paper/board machine or finishing machine, the roll comprising a roll shell
5 rotating around the said inner structure, **characterised** in that the structure is at least partly comprised of composite material, including reinforcing fibres in matrix material.
2. A structure as claimed in claim 1, **characterised** in that the structure is
10 comprised of a combination of metallic material and composite material.
3. A structure as claimed in claim 2 in a deflection-compensated roll comprising a stationary shaft (11) and a shell (12) arranged to rotate around it, the shell being supported on the shaft by loading elements (17) which
15 exert a loading force against the inner surface of the shell to load the shell towards the backing roll forming a nip with the said roll, **characterised** in that the structure is the said stationary shaft having a frame part (11) essentially of fibre-reinforced composite, in which is formed a support part (26) of steel or cast iron extending in the longitudinal direction of the shaft
20 for receiving the loading elements (17) supporting the shell and for supporting them on the shaft.
4. A structure as claimed in claim 3, **characterised** in that on the side of the shaft (11) opposite to the said support part (26) and under tensile stress are
25 added stiffening, plate-like elements (21-23) of composite material for increasing the flexural stiffness of the shaft at desired points in the longitudinal direction of the shaft.
5. A structure in a deflection-compensated roll as claimed in claim 2
30 comprising a stationary shaft (11) and a shell (12) arranged to rotate around it, the shell being supported on the shaft by loading elements (17) which

exert a loading force against the inner surface of the shell to load the shell towards the backing roll forming a nip with the said roll, **characterised** in that the structure is the said stationary shaft having a frame part (11) essentially of metal coated with fibre-reinforced composite material (50).

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6. A structure as claimed in claim 1, **characterised** in that the structure is a suction box (104) inside a suction roll.

7. A structure as claimed in claim 6, **characterised** in that at least the
10 suction box seals' (104) holder structure (105) is of composite.

8. A structure as claimed in claim 6, **characterised** in that the suction box (104) is comprised essentially completely of composite material.

15 9. A structure as claimed in any of the claims 1 to 8, **characterised** in that the fibres in the composite material are located essentially in the longitudinal direction of the structure.